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 1: Eur Heart J. 2000 Jul;21(13):1081-90.

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- Eur Heart J. 2000 Jul;21(13):1036-9.

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Relationship of serum C3 to fasting insulin, risk factors and previous ischaemic events in middle-aged men.

Muscare A, Massarelli G, Bastagli L, Poggiopollini G, Tomassetti V, Drago G, Martignani C, Pacilli P, Boni P, Puddu P.

Department of Internal Medicine, University of Bologna, Bologna, Italy.

AIMS: Serum C3 is a powerful indicator of the risk of myocardial infarction, which correlates with body mass index, serum lipids and blood pressure. This study was performed to ascertain whether such correlations may be explained by an association of C3 with fasting insulin, and to assess comparatively the relationships of C3 and traditional risk factors to previous myocardial infarction. **METHODS AND RESULTS:** The fasting levels of C3, insulin, and the main risk factors were evaluated in 1090 unselected men aged 55-64 years, including 129 cases of previous ischaemic events (51 myocardial infarctions). In multivariate analysis C3 was associated with insulin ($r=0.27$, $P<0.0001$), cholesterol ($r=0.18$, $P<0.0001$), body mass index ($r=0.13$, $P<0.0001$), glucose ($r=0.12$, $P=0.0001$), systolic blood pressure ($r=0.10$, $P<0.001$), triglycerides ($r=0.09$, $P<0.01$) and HDL-cholesterol ($r=-0.06$, $P<0.05$). These variables explained 31% of the total C3 variance. Alcohol consumption and physical activity correlated inversely with C3, while no correlation was found with smoking and family history of myocardial infarction. C3 was associated with previous myocardial infarction and stroke, but not with angina pectoris and peripheral arterial disease. In logistic regression the variables associated with previous myocardial infarction were C3 ($P=0.011$), family history of myocardial infarction ($P=0.018$), ex-smoker status ($P=0.020$), age ($P=0.025$), glucose ($P=0.028$) and HDL-cholesterol ($P=0.051$, inverse relationship).

CONCLUSIONS: The association of C3 with myocardial infarction persists retrospectively, and is more significant than any other association of traditional risk factors with previous myocardial infarction. Of the many

variables associated with C3, fasting insulin is its main covariate, which suggests that C3 is a marker of a pro-atherogenic metabolic imbalance partly coinciding with insulin resistance. Copyright 2000 The European Society of Cardiology.

PMID: 10843826 [PubMed - indexed for MEDLINE]

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